



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,320	06/28/2004	Steffen Heidenreich	44091	9109
23548 7590 06/29/2007 LEYDIG VOIT & MAYER, LTD 700 THIRTEENTH ST. NW SUITE 300 WASHINGTON, DC 20005-3960			EXAMINER MERKLING, MATTHEW J	
			ART UNIT	PAPER NUMBER
			1764	
			MAIL DATE	DELIVERY MODE
			06/29/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/500,320

Applicant(s)

HEIDENREICH, STEFFEN

Examiner

Matthew J. Merkling

Art Unit

1709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 6 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/8/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 6 is objected to because of the following informalities: the phrase "dimensionally stable" is duplicated in line 2. Appropriate correction is required.
2. Claim 16 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim does not list any materials which the catalyst material comprises, and therefore does not limit parent claim.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 7 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 7 recites the limitation "the uncoated material" in line 2. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 16 does not add any limitations to the parent claim. For purposes of this examination, as the error in claim 16 appears to be a typographical error, the examiner

Art Unit: 1709

will refer to the unamended claims submitted on 6/28/04 and examine claim 16 with the limitation contained in the unamended claim of 'the catalyst material comprising one or more oxides or mixed oxides of rare earths or of one or more aluminates or of one or more silicates or of one or more titanates or titanium dioxides'.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 6, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Motoki et al. (US 5,925,156).

Regarding claim 1, Motoki discloses a filter element (Fig. 10A/B) comprising a porous (filter) formed body (col. 10, lines 13-15, (111)) with an interior that forms a space for unfiltered fluid (G), wherein the interior of the formed body includes a catalyst material (112, C) and an open flow channel (see Fig. 10A/B, the center of the filter element remains open).

Regarding claim 2, Motoki, as discussed in claim 1 above, further discloses the porous formed body (111) has a wall (see Fig. 10A/B), and further comprising a porous or perforated formed body insert (porous tubular support member, col. 10 lines 13-15, (115)) which is inserted into the interior such that it is spaced apart from the wall (see annular space between 115 and 111 in Figs. 10A/B) of

the porous formed body and causes the flow channel to remain open (see Figs. 10A/B), and wherein the intermediate space (annular space) between the porous formed body and the formed body insert is filled with catalyst material (col. 10 lines 17-19).

Regarding claims 3 and 4, Motoki, as discussed in claim 2 above, further discloses the formed body insert (support member) comprises a ceramic material or a metal (col. 5 line 58 – col. 6 line 9).

Regarding claim 6, Motoki, as discussed in claim 1 above, further discloses a porous catalyst body (catalyst is contained in solid body, col. 12 lines 23-30, (117)) which is inserted into the interior of the formed body (see Fig. 13A/B), wherein said catalyst body comprises the catalyst material (col. 12 lines 23-30) and causes the flow channel to remain open (see Fig. 13A/B).

Regarding claims 10 and 11, Motoki, as discussed in claims 2 and 6 above, further discloses porous formed body (111) has a cylindrical configuration (tubular, col. 10 lines 13-15) and the interior is closed on one side (see Figs. 10A/B and 13A/B) and wherein the formed body insert (col. 10 lines 13-15, (115)) and catalyst body (col. 12 lines 23-30, (117)) are tubes that are open on both sides (see Figs. 10A/B, 13A/B).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1709

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motoki et al. (US 5,925,156) as applied to claim 2 above, and further in view of Cisar et al. (US 6,054,228).

Regarding claim 5, Motoki, as discussed in claim 2 above, fails to teach the formed body insert comprising a plastic.

Cisar also discloses a filter for gases.

Cisar teaches a polycarbonate filter (plastic) in order to preferentially remove water from a gaseous stream (col. 16 line 60 – col. 17 line 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the polycarbonate filter of Cisar in the formed body insert filter of Motoki in order to preferentially remove water from a gas stream.

Art Unit: 1709

12. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoki et al. (US 5,925,156) as applied to claim 1 above, and further in view of Buck (US 6,284,201).

Regarding claims 7 and 8, the high temperature filtering apparatus of Motoki (col. 1 lines 4-7), as discussed in claim 1 above, fails to teach the catalytic material comprises metallic or ceramic (which is a metallic oxide, see "ceramic" *The American Heritage® Science Dictionary* Houghton Mifflin Company) fibers.

Buck discloses an apparatus for purification of gases also comprising filters.

Buck teaches ceramic fibers coated with catalytic material in order to provide a material that is resistant to high temperature (col. 4 lines 12-23).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the ceramic fibers of Buck in the catalytically coated material of Motoki in order to provide a material that is resistant to high temperature.

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motoki et al. (US 5,925,156) as applied to claim 1 above, and further in view of Moroni et al. (US 3,925,248).

Regarding claim 9, Motoki, as discussed in claim 1 above, fails to teach the catalytic material comprises plastic fibers or expanded plastics.

Moroni also discloses an apparatus for filtering gasses.

Moroni teaches a foam plastic catalyst support material (see abstract) in the form of extremely fine grains (fibers, col. 1 line 67-68) that is used in filtering and

Art Unit: 1709

purifying gasses, as an advantageous support material for removing odors and noxious substances (col. 1 line 54 – col. 2 line 13).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the plastic material of Moroni in the catalyst material of Motoki in order to advantageously purify gasses and remove odors and noxious substances.

14. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoki et al. (US 5,925,156) as applied to claims 2 and 6 above, and further in view of Sellakumar (US 5,242,472).

Regarding claims 12 and 13, Motoki, as discussed in claims 2 and 6 above, teaches the porous formed body is cylindrical (tubular, col. 10 lines 13-15) and the formed body insert (115) and catalyst body (117) are open on both sides (see Figs. 10A/B, 13A/B). Motoki fails to teach the porous formed body having openings at both ends.

Sellakumar also discloses a filtering apparatus.

Sellakumar teaches filtering elements (17) that are open on both ends (col. 3 lines 62-67) in order to allow fluid to be passed through filter in the axial direction quickly to remove filtered material that has built up on the filter (col. 4 lines 30-41).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add openings on both sides of the filtering element, as in Sellakumar,



to the filter element of Motoki in order to allow fluid to be passed through filter in the axial direction quickly to remove filtered material that has built up on the filter.

15. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoki et al. (US 5,925,156) as applied to claims 2 and 6 above, and further in view of Prolss (US 4,243,536).

Regarding claims 14 and 15, Motoki, as discussed in claims 2 and 6 above, further discloses the porous formed body (111) has a peripheral wall, a bottom wall, and a top wall (see Figs. 10A/B, 13A/B) which enclose an interior region, and wherein the formed body insert (115) and catalyst body (117) represent a smaller version of the porous formed body (see Figs. 10A/B, 13A/B).

Motoki fails to teach the porous formed body having a disk shape.

Prolss also discloses a filter apparatus.

Prolss teaches a filter apparatus with disk shaped filter elements (4) with inlets and outlets at the top and bottom of the elements (col. 1 lines 52-68, see Fig. 1), in order to provide an efficient filter that is simple and economical (col. 1 lines 52-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use filter elements in the shape of disks, as in Prolss, in the filter element of Motoki in order to provide an efficient filter that is simple and economical.

Art Unit: 1709

16. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoki et al. (US 5,925,156) as applied to claim 1 above, and further in view of Nishino et al. (US 4,350,613).

Regarding claims 16-20, Motoki, as discussed in claim 1 above, teaches an apparatus for treating exhaust gas from a combustion reaction (col. 1 lines 4-7).

Motoki fails to teach that the catalyst material comprises an oxide, calcium aluminate, and a platinum promoter.

Nishino also discloses an apparatus for treating exhaust gas from a combustion reaction (col. 1 lines 5-10).

Nishino teaches a catalyst for purifying exhaust gasses by preferentially removing carbon monoxide and hydrocarbons from the exhaust gas (col. 1 lines 5-10). The catalyst is comprised of calcium aluminate, titanium oxide, and a platinum promoter/noble metal (see abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the catalyst of Nishino with calcium aluminate, titanium oxide and a platinum promoter in order to purify exhaust gasses by preferentially removing carbon monoxide and hydrocarbons from the exhaust gas.

### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Merkling whose telephone number is 571-

Art Unit: 1709

272-9813. The examiner can normally be reached on Monday - Friday 8:30-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa D. Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJM

MJM



ALEXA D. NECKEL  
SUPERVISORY PATENT EXAMINER